Roland®

RD-250S/300S

Owner's Manual

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS

WARNING: When using electric products, basic precautions should always be followed, including the following:

1. Read all the instructions before using the product.
2. Do not use this product near water- for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a cart or stand that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss.
   Do not operate for a long period of time at a high volume level or at level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers or other products that produce heat.
7. The product should avoid using in where it may be affected by dust.
8. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
9. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
10. Do not tread on the power-supply cord.
11. Do not pull the cord but hold the plug when unplugging.
12. When setting up with any other instruments, the procedure should be followed in accordance with instruction manual.
13. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
14. The product should be serviced by qualified service personnel when:
    - A: The power-supply cord or the plug has been damaged; or
    - B: Objects have fallen, or liquid has been spilled into the product; or
    - C: The product has been exposed to rain; or
    - D: The product does not appear to operate normally or exhibits a marked change in performance: or
    - E: The product has been dropped, or the enclosure damaged.
15. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

SAVE THESE INSTRUCTIONS

WARNING

THIS APPARATUS MUST BE EARTH GROUNDED.

The three conductors of the mains lead attached to this apparatus are identified with color as shown in the table below, together with the matching terminal on the UK type power plug. When connecting the mains lead to a plug, be sure to connect each conductor to the correct terminal, as indicated.

"This instruction applies to the product for United Kingdom."

MAINS LEADS		PLUG
Conductor	Color	Mark on the matching terminal
Live	Brown	Red or letter L
Neutral	Blue	Black or letter N
Grounding	Green-Yellow	Green, Green-Yellow, letter E or symbol

Bescheinigung des Herstellers /Importeurs

Hiermit wird bescheinigt, daß der/die/das

ROLAND DIGITAL PIANO RD-250s/300s

(Gerät Typ Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046 / 1984

(Amtsblattverfügung)

funk-entstört ist

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka / Japan

(Name des Herstellers/Importeurs)

RADIO AND TELEVISION INTERFERENCE

"Warning" - This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J, of Part 15, of FCC rules. Operation with non-certified equipment is likely to result in interference to radio and TV reception.

The equipment described in this manual generates and uses radio-frequency energy. If it is not installed and used properly, that is, in strict accordance with the instructions, it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that this interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by the following measures:

- Reorient the receiving antenna (that is, the antenna for the radio or TV that is "receiving" the interference).
- Reposition the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet, prepared by the Federal Communications Commission:

"How to Identify and Resolve Radio-TV Interference Problems."

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

Please read the separate volume "MIDI", before reading this owner's manual.

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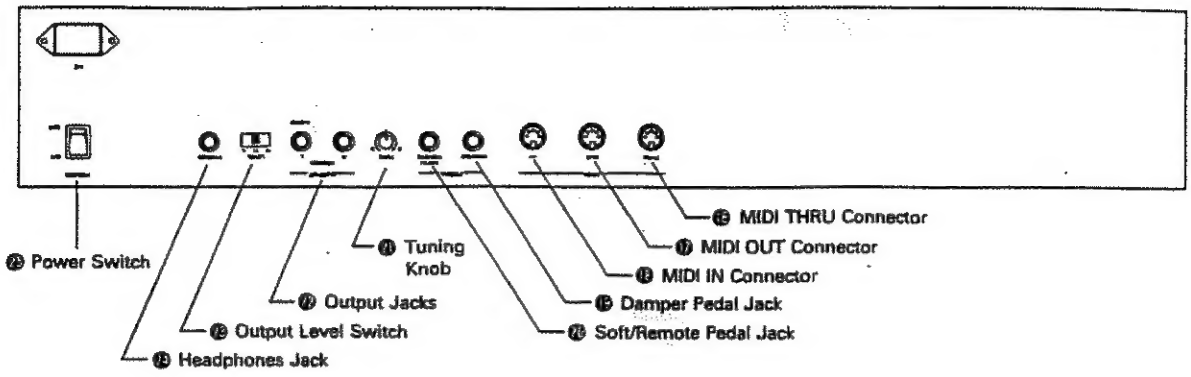
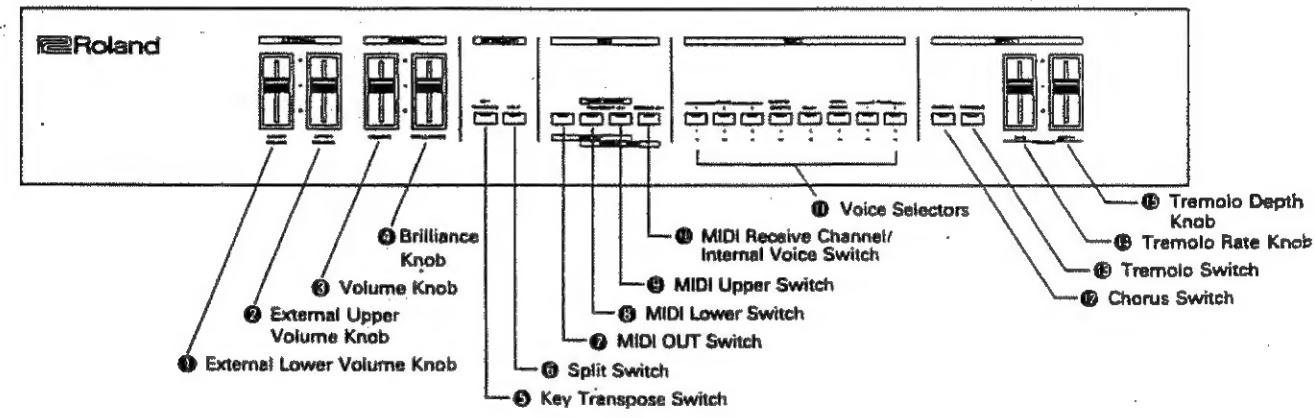
■ PANEL DESCRIPTION





IMPORTANT NOTES

Power Supply

- The appropriate voltage to be used is shown on the name plate on the rear panel. Be sure that it meets the voltage system in your country.
- Do not use the same socket that is used for any noise generating device, such as motor, or variable lighting system.
- This unit might not work properly if the power cable is plugged in with the unit turned on. If this happens, simply turn the unit off, and turn it on again in few seconds.
- It is normal for the unit to be warm while operating.

Power Cord

- When disconnecting the power cord from the socket, do not hold the cord but the plug. When the unit is not to be used for a long period, disconnect the power cord.

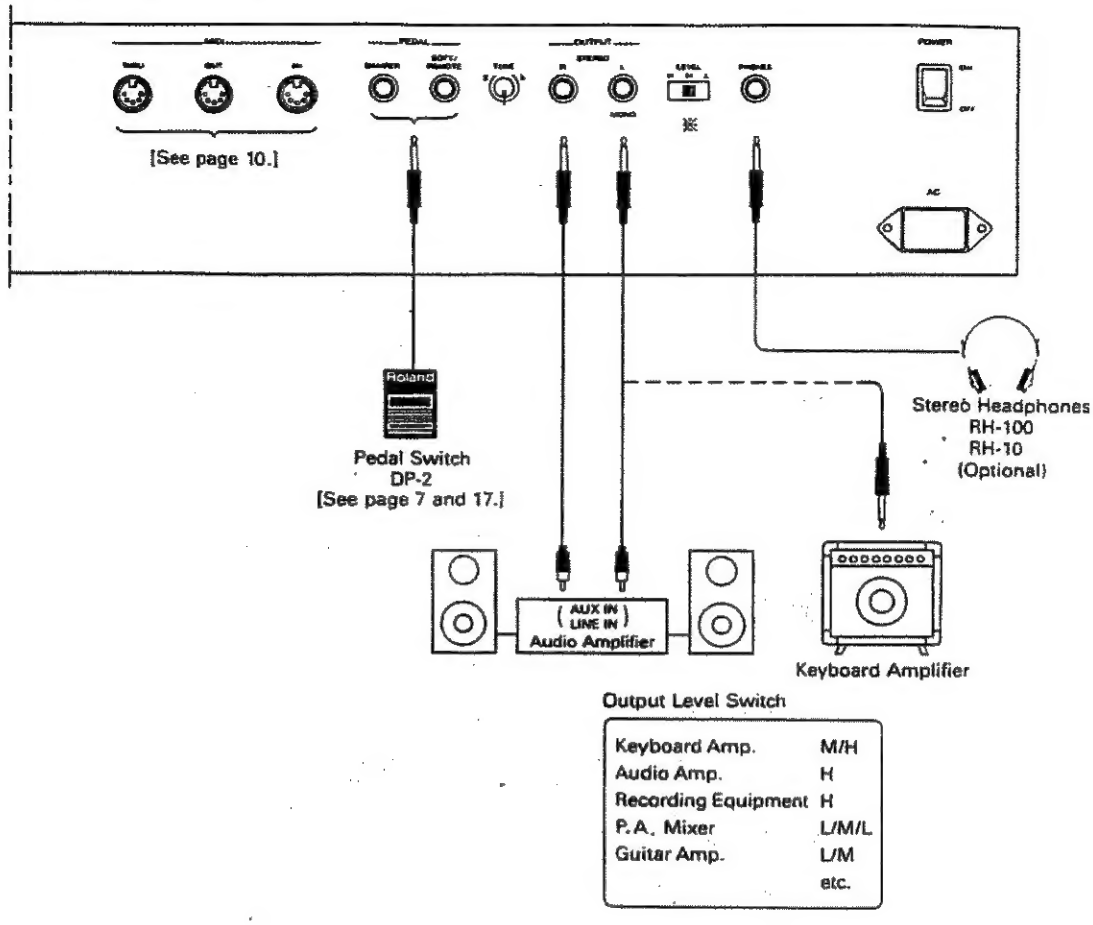
Location

- Avoid using the RD-250s and RD-300s in extreme heat or humidity or where it may be affected by dust, direct sunlight or vibration.

Cleaning

- Use a soft cloth and clean only with a mild detergent.
- Do not use solvents such as paint thinner.

■ CONNECTIONS



■ HOW TO SET UP THE PIANO

1. Connect the supplied power cord to the Receptacle on the rear panel.

2. Connect the plug to the wall socket.

* Be sure to take the step 1 then 2. Do not do it the other way round.

Roland has developed a new type of digital synthesis technology -- Structured Adaptive (SA) Sound Synthesis. SA Sound Synthesis employs a technique which neither approximates nor simulates acoustic sounds, but actually recreates these sounds. Note for note, nuance for nuance, harmonic characteristics and timbre variations are faithfully replicated across the entire range of the keyboard. Sounds respond to playing dynamics with extraordinary accuracy and warmth. SA Sound Synthesis far surpasses sampling technology in its ability to reproduce and articulate astoundingly realistic acoustic sounds.

■ FEATURES

- The Roland RD-250s and RD-300s MIDI Digital Pianos feature 8 studio quality keyboards created by SA Sound Synthesis.
- The RD-250s and RD-300s include built-in Chorus and Tremolo effects.
- The RD-250s and RD-300s can be used as excellent MIDI Keyboard Controllers or as MIDI Sound Modules.

■ CONTENTS

For Canada

CLASS B

NOTICE

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

CLASSE B

AVIS

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Réglement des signaux parasites par le ministère canadien des Communications.

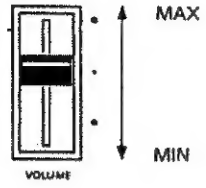
1 RD-250s or RD-300s as a Piano

① **Turn the piano on.**

The indicator of Piano 1 lights up.

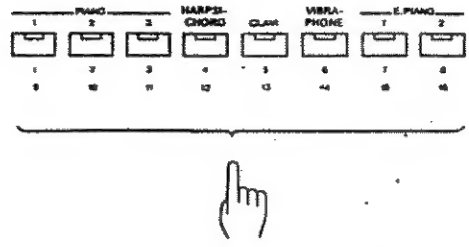
* For about 2 seconds after turned on, the piano cannot be played because of the muting circuit.

② **Adjust the volume with the Volume Knob .**



a. Voice Selection

The RD-250s and RD-300s feature 8 keyboard sounds; two acoustic grand pianos, electric grand piano, harpscichord, clavi, vibraphone and two electric pianos. To select one of these voices, press one of the Tone Selector buttons numbered 1 through 8. One keyboard sound can be selected at a time.



VOICE PRESERVE FUNCTION

The RD-250s and RD-300s feature the Voice Preserve Function, that is, while you are playing the keyboard using a certain tone color, you can request the next tone color to be used, without the tone actually changeing until you release all the keys.

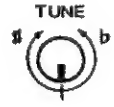
When the piano is being played with the Note or Damper ON, the tone color does not change. (the indicator of the corresponding sound flashes.) To change the voices, lift all Notes and the Damper OFF. (Now, the indicator of the new voice is constantly lighted.)

This Voice Preserve function applies to the external Program Change received by the RD-250s or RD-300s.

b. Tuning

The Tune Knob ㉑ is provided for controlling the overall tuning center of the RD-250s or RD-300s. This is especially useful for tuning to other acoustic instruments, synthesizers, and synthesizer sound modules. Since the RD-250s and RD-300s incorporate S/A Synthesis, the tuning of individual notes will never be necessary. At its center position:

Middle A = 442Hz, and the variable range is ± 15 cents.



c. Damper/Soft Pedal

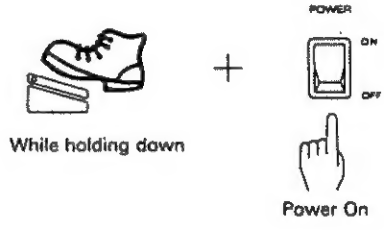
The Damper Pedal Jack ⑲ and Soft Pedal Jack ⑳ are provided to connect to the DP-2. These pedals function just like the damper and soft pedal on an acoustic piano.

*** The Soft Pedal can be used as a Sostenuto pedal.**

<Sostenuto Pedal>

How to turn the Soft Pedal to Sostenuto Pedal.

Connect the DP-2 to the Soft Pedal Jack, and turn the piano on while holding the pedal down.



Now, the Soft Pedal works as a Sostenuto Pedal.

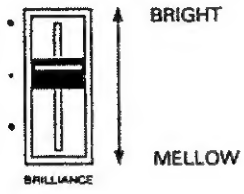
When the pedal is turned to a Sostenuto Pedal, it loses the Soft Pedal function.

Pressing the Sostenuto Pedal will turn on the Damper of the note currently played. The following notes will not take on any effect.

* To return the pedal to the Soft Pedal, turn the piano off once, then turn it on again.

d. Brilliance

As you raise the Brilliance knob ❹, the tone will be brighter, and mellower when lowered.



e. Chorus/Tremolo

The piano includes built-in Chorus and Tremolo effects.

• Chorus

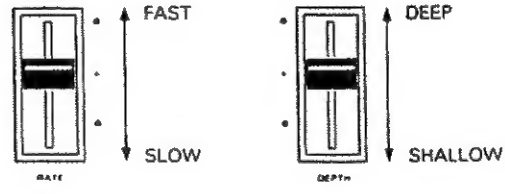
By pressing the Chorus switch ⓬, a lush stereo chorus effect can be obtained through the instrument's internal speaker/amplifier system or via the stereo outputs.

• Tremolo

The Tremolo switch ⓭ engages the tremolo effect. The Tremolo circuit is stereo and is especially useful when used with the electric piano and vibraphone sounds.

Rate
The Tremolo Rate knob ⓮ is used to increase or decrease the speed of the tremolo effect. Raising it increases the tremolo speed while lowering it decreases the speed of the effect.

Depth
Using the Tremolo Depth knob ⓯, the depth of the Tremolo effect can be changed.



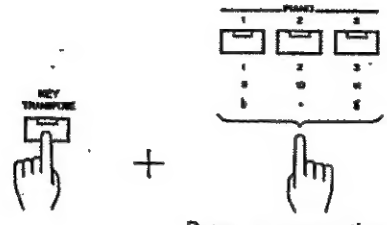
* On/Off of the Tremolo and/or the Chorus effect can be separately set in each voice and is retained until the piano is turned off.

f. Key Transpose

By using the appropriate key, you can shift the pitch of the entire keyboard.

* The RD-250s and RD-300s default to C.

While holding the Key Transpose Switch ❺ down, press either of the following switches as many times as necessary.



While holding down

Press as many times as necessary for the amount of transposition.

[♯] Switch (= Piano 3 Switch)

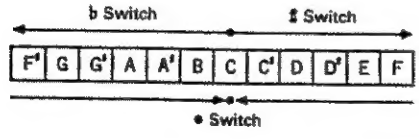
Pressing this switch will increase the pitch in semi-tone steps. (This switch can be used up to 5 times.)

[♭] Switch (= Piano 1 Switch)

Pressing this switch will decrease the pitch in semi-tone steps. (This switch can be used up to 6 times.)

[•] Switch (= Piano 2 Switch)

This switch returns the key to the normal condition.



When the key other than C is set, the indicator of the Key Transpose will glow.

Once the key is transposed, the Transpose On or Off can be selected by pushing the Key Transpose Switch ❺.

The Key Transpose operation cannot be done if any key is pressed on the keyboard. Be sure no key is pushed when you are transposing the key.

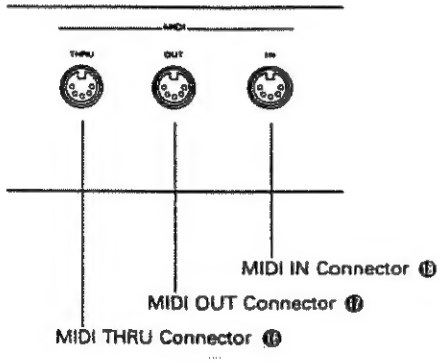
While you are taking the transposing operation, the RD-250s or RD-300s cannot be played.

[2] RD-250s or RD-300s as a MIDI Device

Part of the power of your RD-250s and RD-300s is in the use of the MIDI (Musical Instrument Digital Interface). To learn more about MIDI and the various music systems that can be added to your RD-250s and RD-300s, refer to the enclosed booklet "MIDI" and the MIDI implementation chart in the back of this owner's manual.

MIDI Connectors

The RD-250s and RD-300s have MIDI IN, MIDI OUT and MIDI THRU Connectors on the rear panel.



■ MIDI IN Connector ⓯

When using the piano as a MIDI sound module controlled by the external MIDI device, connect the MIDI IN Connector to the MIDI OUT or MIDI THRU on the external device.

■ MIDI OUT Connector ⓱

When using the piano as a keyboard controller that drive the external device, connect the MIDI OUT Connector to the MIDI IN on the external device.

■ MIDI THRU Connector ⓰

Through this, the exact copy of the signal fed into the MIDI IN is sent out.

1. RD-250s or RD-300s as a MIDI Keyboard Controller

The RD-250s and RD-300s can be used as perfect MIDI Keyboard Controllers.

The RD-250s and RD-300s default to as follows.

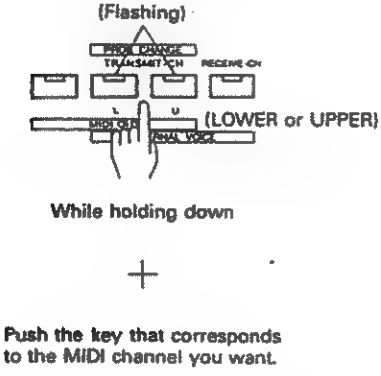
Function		Setting
Split Point		C4 (Split Off)
Transmit Channel	LOWER	2
	UPPER	1
MIDI OUT (On/Off)	LOWER	ON
	UPPER	ON
Internal Voice (On/Off)	LOWER	ON
	UPPER	ON
Receive Channel		1 (OMNI ON)

a. Setting Transmit MIDI Channel

To use the RD-250s or RD-300s as a MIDI keyboard controller, it is necessary to match the RD-250s or RD-300s's transmit channel to the receive channel of the connected MIDI sound module.

The transmit channels of the Lower and the Upper should be set separately.

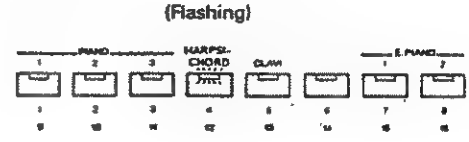
- ► While holding the MIDI Lower Switch ❽ down, push the key on the keyboard which corresponds to the MIDI channel you want. (from A0 to C2).
- ► While holding the MIDI Upper Switch ❾ down, take the same procedure as above.



* The Upper and the Lower Channels cannot be set to the same number.

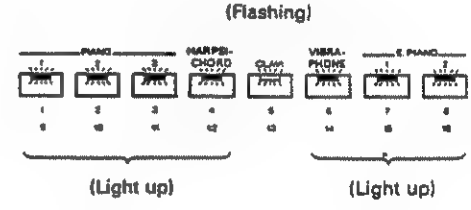
When setting the Transmit channel of 1 to 8, the indicator of the corresponding Voice Selector flashes.

(e.g. 1) When MIDI channel 4 is set.



When setting the Transmit Channel of 9 to 16, the indicator of the corresponding Voice Selector flashes and the other Voice Selectors glow.

(e.g. 2) When MIDI channel 13 is set.



b. Setting Split Point

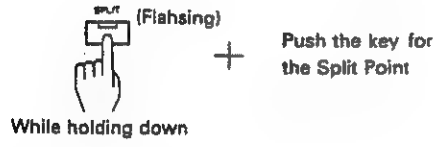
Split Function

The RD-250s and RD-300s Split Functions allow to split the keyboard into the Upper and the Lower sections at any key (Split Point) you like. The Upper and the Lower keyboard can have individual MIDI channel numbers on which different performance information can be simultaneously transmitted to the external sound module.

Split On is called Split Mode, and Split Off Whole Mode.

► While holding the Split Switch ⑥ down, push the key for the Split Point on the keyboard.

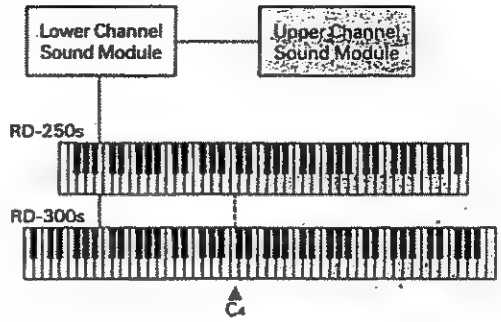
* The key of the Split Point is included in the Upper section.



When the Split Point is set, the indicator of the Split Switch ⑥ lights up.

Once the Split Point is set, the Split mode or the Whole mode can be selected by pushing the Split Switch.

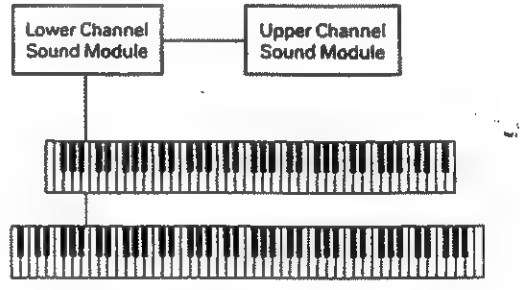
(e.g. 1) When C4 is selected for the Split Point.



A0 – B3 → Transmits the Key Information on the Lower Channel.
C4 – C8 → Transmit the Key Information on the Uppoer Channel.

In the Whole Mode (Split Off), all the performance information is sent on the both Upper and Lower channels.

(e.g. 2) When the Split is Off (Whole Mode)

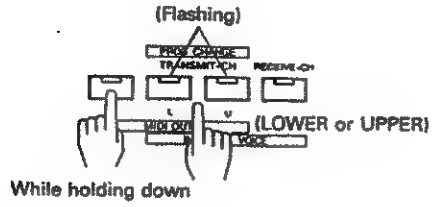


All the Key Information is sent on the both Upper and Lower Channels.

c. MIDI OUT (On/Off)

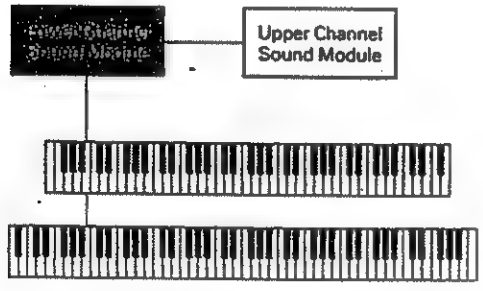
MIDI OUT On/Off selects whether or not to send the performance information on the Lower and/or the Upper channels.

► While holding the MIDI OUT Switch ❼ down, push the MIDI Lower Switch ❽ (and/or MIDI Upper Switch ❾).



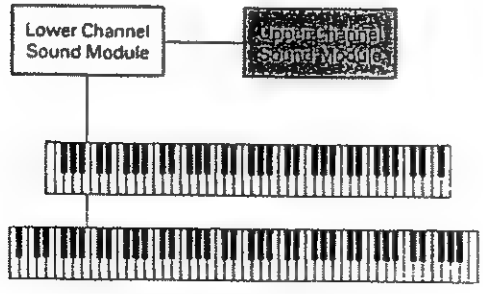
* Even in the Whole Mode, MIDI OUT On/Off can be individually set for each Lower and Upper.

(e.g. 1) Lower Off, Upper On in the Whole Mode



All the performance Information is sent on the Upper Channel.

(e.g. 2) Lower On, Upper Off in the Whole Mode

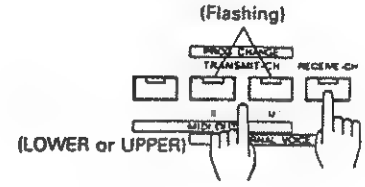


All the Performance Information is sent on the Lower Channel.

d. Internal Voice (On/Off)

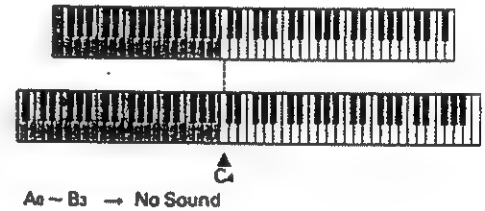
You can select whether or not to transmit the Key information of the Upper and/or the Lower to the internal sound module.

► While holding the Internal Voice Switch ❿ down, push the MIDI Lower Switch ❽ (or the MIDI Upper Switch ❾).



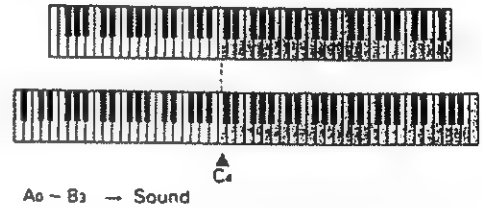
While holding down

(e.g. 1) Split Point: C4 (ON)
Internal Voice: Lower Off, Upper On



A0 ~ B3 → No Sound
C4 ~ C8 → Sound

(e.g. 2) Split Point: C4 (ON)
Internal Voice: Lower On, Upper Off



A0 ~ B3 → Sound
C4 ~ C8 → No Sound

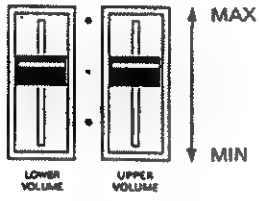
* While in the Whole Mode, the Internal Voice cannot be turned off unless both the Lower and the Upper are off.

e. Transmitting MIDI Information

* When the MIDI OUT is off (see page 13), no MIDI information can be transmitted.

• External Volume

With the External Lower Volume Knob ❶ and the External Upper Volume Knob ❷, the volume on the external MIDI sound module can be controlled.

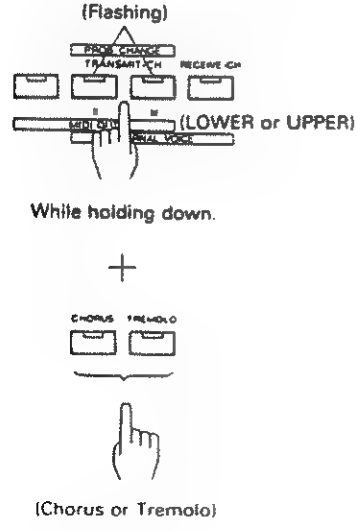


* The above function cannot be obtained on some external MIDI devices. Please refer to the Implimentation Chart shown in the owner's manual of the external MIDI sound module.

• Chorus, Tremolo (On/Off)

On/Off of the Chorus and/or Tremolo can be transmitted on the Lower and/or the Upper Channels.

► While holding the MIDI Lower Switch ❽ (and/or the MIDI Upper Switch ❾) down, push the Chours Switch ⓬ or the Tremolo Switch ⓭.



• Program Change

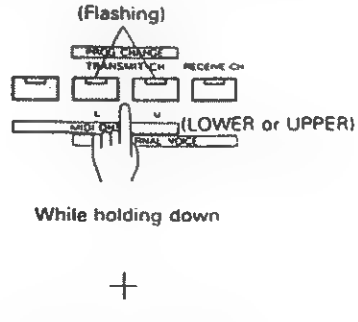
The RD-250s and RD-300s can transmit the Program change message 1 to 128 on the Lower and/or the Upper channels.

The table below shows how the Group/Bank/Voice Number on the RD-250s and RD-300s correspond to the Program Change numbers.

Program Change Table

	NO. / BANK	1	2	3	4	5	6	7	8
A	1	1	2	3	4	5	6	7	8
	2	9	10	11	12	13	14	15	16
	3	17	18	19	20	21	22	23	24
	4	25	26	27	28	29	30	31	32
	5	33	34	35	36	37	38	39	40
	6	41	42	43	44	45	46	47	48
	7	49	50	51	52	53	54	55	56
	8	57	58	59	60	61	62	63	64
B	1	65	66	67	68	69	70	71	72
	2	73	74	75	76	77	78	79	80
	3	81	82	83	84	85	86	87	88
	4	89	90	91	92	93	94	95	96
	5	97	98	99	100	101	102	103	104
	6	105	106	107	108	109	110	111	112
	7	113	114	115	116	117	118	119	120
	8	121	122	123	124	125	126	127	128

► While holding the MIDI Lower Switch ❽ (or the MIDI Upper Switch ❾) down, push the key that corresponds to the Group/Bank/Voice number.



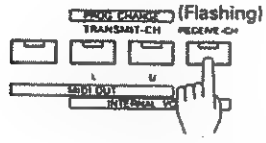
Push the key that corresponds to the Group/Bank/Voice Number.

2. RD-250s or RD-300s as MIDI Sound Module

a. Setting Receive Channel

When using the RD-250s or RD-300s as a MIDI sound module, you should set the receive MIDI channel of the RD-250s or RD-300s to the same number as the transmit channel of the MIDI device that controls the RD-250s or RD-300s.

► While holding the MIDI Receive Channel Switch ⑩ down, push the key (from A0 to C2) that corresponds to the MIDI channel you want.



(Flashing)

While holding down.

+

Push the key that corresponds to the MIDI Channel you want.

When setting the Receive MIDI channel, the indicator o the Voice Selectors will react just like when setting the Transmit MIDI channel. (See page 11 "a. Setting Transmit MIDI Channel".)

b. Receiving MIDI Information

- **Program Change**

The RD-250s and RD-300s can receive the Program Change from 1 to 32 but ignore 33 to 128.

* The detailed explanation on the tramsitting and receiving messages follows in the next section "3. MIDI Functions".

3. MIDI Functions

The RD-250s and RD-300s can select any of the following three modes that decide how the messages are received and transmitted.

(I) By taking the procedure shown from page 11 to 15, Note On/Off, Program Change and Control Change are transmitted and received.

(II) Note On/Off, Program Change and Control Change are transmitted and received.
- The moment a new voice is selected on the RD-250s or RD-300s, the corresponding program change number is transmitted. The chorus or tremolo On/Off is transmitted as a control change message. This setting may be used when recording the data into a MIDI sequencer and play it back.

(III) Note On/Off, Program Change and Control Change are transmitted. Program Change, Chorus On/Off and Tremolo On/Off cannot be received.

* Refer to MIDI Implimentation Chart in the back of this owner's manual.

How to select the above communication mode

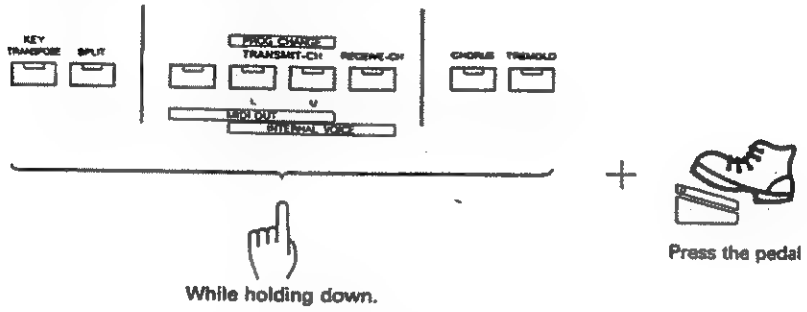
Mode (I): Turning the RD-250s or RD-300s on will automatically selects this mode.
Mode (II): Turn the RD-250s or RD-300s on while holding the MIDI OUT Switch ❼ down.
Mode (III): Turn the RD-250s or RD-300s on while holding down the Voice Selector Piano-1.

■ Other Function

• Remote Pedal

Connect the supplied pedal switch DP-2 to the Remote Pedal Jack ⑳, and the DP-2 can be used as ■ remote switch for the Key Transpose, Split, MIDI OUT, MIDI Lower, MIDI Upper, Receive Channel/Internal Voice, Chorus or Tremolo switch.

▶ While holding down the relevant switch (Key Transpose, Split, MIDI OUT, MIDI Lower, MIDI Upper, Receive Channel/Internal Voice Chorus or Tremolo), press the Pedal Switch.



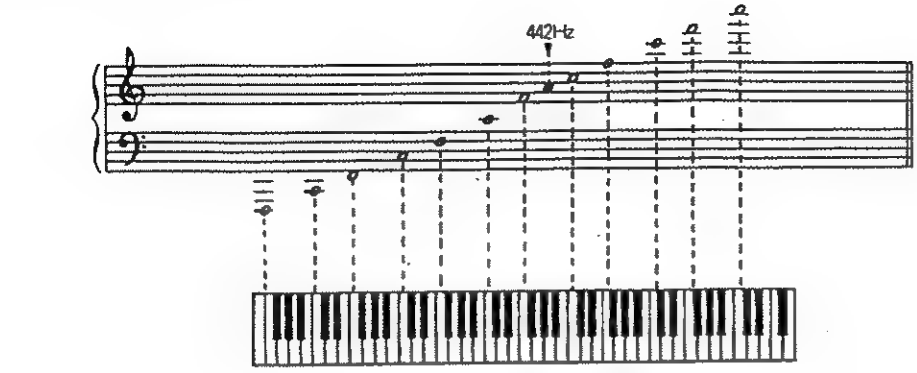
While holding down.

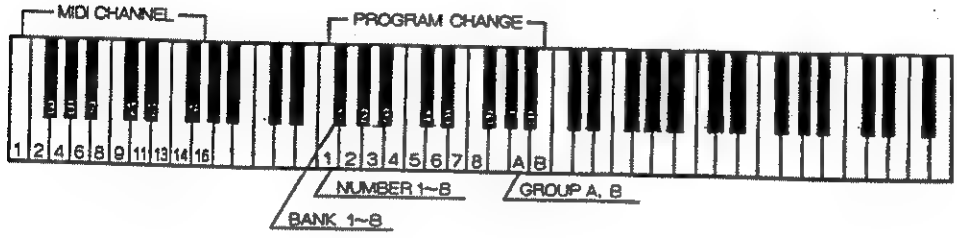
Press the pedal

* When the pedal is used as a remote pedal, it does not function as a soft pedal. If you wish to use it as ■ soft pedal, turn the RD-250s or RD-300s off once, then turn it on again.

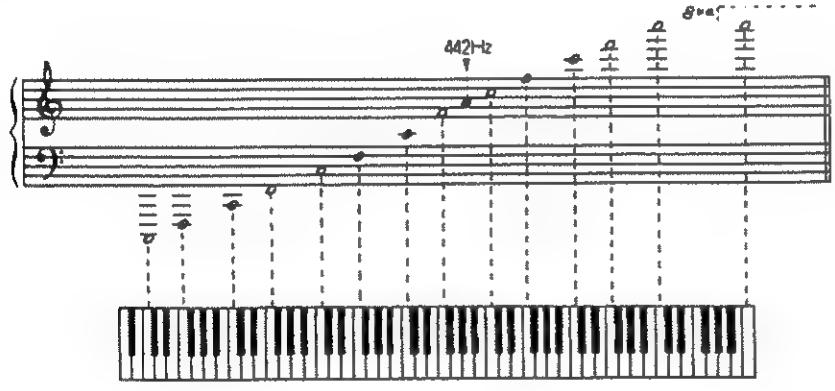
■ Sound Range Diagram

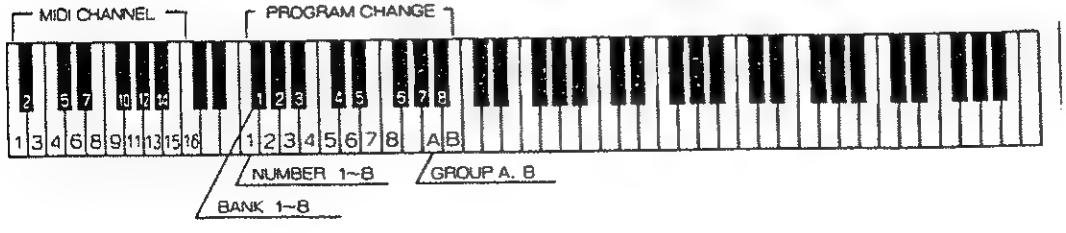
RD-250s





RD-300s





■ Setting Memo

SET No.	KEY TRANS.	SPLIT ON/OFF	MIDI OUT				INTERNAL VOICE				
			LOWER		UPPER						
			ch/SET	P.C.	ch/SET	P.C.	VOICE	CHORUS	TREMOLO RATE/DEPTH	LOWER ON/OFF	UPPER ON/OFF
DEMO1	C	C4	2/MKS20	A 15 (CLAVI)	1/EM 101	A 11 (Strings)	EPIANO1	ON	OFF	OFF	ON
DEMO2	C	OFF	〃	A 11 (PIANO 1)	〃	A 25 (Flute)	HARPSI	OFF	OFF	OFF	ON
DEMO3	C	F4	OFF	---	〃	A 17 (Brass)	PIANO3	ON	OFF	ON	ON

MODEL RD-250s/300s MIDI Implementation

Date : Aug. 20. 1997
Version : 1.0

1. TRANSMITTED DATA

Status	Second	Third	Description	
1001 nnnn	0kkk kkkk	0000 0000	Note OFF	
1001 nnnn	0kkk kkkk	0vvv vvvv	Note ON kkkkkkk = 15 - 113 / RD-300s 22 - 108 / RD-250s vvvvvvv = 1 - 127	*1
1011 nnnn	0000 0111	0vvv vvvv	Volume vvvvvvv = 0 - 127	*6
1011 nnnn	0100 0000	0111 1111	Hold1 ON	
1011 nnnn	0100 0000	0000 0000	Hold1 OFF	
1011 nnnn	0100 0010	0111 1111	Sostenuto ON	*2
1011 nnnn	0100 0010	0000 0000	Sostenuto OFF	
1011 nnnn	0100 0011	0111 1111	Soft ON	*2
1011 nnnn	0100 0011	0000 0000	Soft OFF	
1011 nnnn	0101 1100	0111 1111	Tremolo ON	*3
1011 nnnn	0101 1100	0000 0000	Tremolo OFF	*3
1011 nnnn	0101 1101	0111 1111	Chorus ON	*3
1011 nnnn	0101 1101	0000 0000	Chorus OFF	*3
1100 nnnn	0ppp pppp		Program Change ppppppp = 0 - 127	*4
1011 nnnn	0111 1011	0000 0000	ALL NOTES OFF	*5
1011 nnnn	0111 1100	0000 0000	OMNI OFF	*6
1011 nnnn	0111 1111	0000 0000	POLY ON	*6
1111"1110			Active Sensing	

Notes :

nnnn : MIDI Channel number (0000 - 1111), ch-1 = 0000
The Basic Transmit Channel can be changed by panel operation.
Refer to 3. BASIC CHANNEL IN TRANSMITTING.

Lower and Upper are both enable,
when the power has been applied.
Each of Lower and Upper can be set to enable
or set to disable by panel operation.

*1 The range can be changed by panel operation.
Refer to 5. KEY TRANSPOSE.

*2 If the power has been applied with the Soft pedal being trodden, Soft pedal is regarded as Sostenuto pedal.

*3 Refer to 6. TREMOLO, CHORUS IN TRANSMITTING.

*4 Refer to 7. PROGRAM CHANGE IN TRANSMITTING.

*5 When all held-keys on the keyboard are released, the ALL NOTES OFF (Bn 7B 0) is sent.

*6 When the power is first applied, following messages are transmitted.
a. OMNI OFF, POLY ON message for Lower and Upper Basic Channel.
b. LOWER Volume data (B1 07 VV) for Lower Basic Channel.
c. UPPER Volume data (B0 07 VV) for Upper Basic Channel.

2. RECOGNIZED RECEIVE DATA

Status	Second	Third	Description	
1000 nnnn	0kkk kkkk	0vvv vvvv	Note OFF, velocity ignored	
1001 nnnn	0kkk kkkk	0000 0000	Note OFF kkkkkkk = 0 - 127 (15 - 113)	*1
1001 nnnn	0kkk kkkk	0vvv vvvv	Note ON kkkkkkk = 0 - 127 (15 - 113) vvvvvvv = 1 - 127	*1
1011 nnnn	0100 0000	0vvv vvvv	Hold1 OFF vvvvvvv = 0 - 63 Hold1 ON vvvvvvv = 64 - 127	
1011 nnnn	0100 0010	0vvv vvvv	Sostenuto OFF vvvvvvv = 0 - 63 Sostenuto ON vvvvvvv = 64 - 127	
1011 nnnn	0100 0011	0vvv vvvv	Soft OFF vvvvvvv = 0 - 63 Soft ON vvvvvvv = 64 - 127	
1011 nnnn	0101 1100	0vvv vvvv	Tremolo OFF vvvvvvv = 0 - 63 Tremolo ON vvvvvvv = 64 - 127	*2 *2
1011 nnnn	0101 1101	0vvv vvvv	Chorus OFF vvvvvvv = 0 - 63 Chorus ON vvvvvvv = 64 - 127	*2 *2
1100 nnnn	0ppp pppp		Program Change ppppppp = 0 - 31	*3
1011 nnnn	0111 1011	0000 0000	ALL NOTES OFF	*4
1011 nnnn	0111 1100	0000 0000	OMNI OFF	*5
1011 nnnn	0111 1101	0000 0000	OMNI ON	*5
1011 nnnn	0111 1110	0000 mmmm	MONO ON	*5
1011 nnnn	0111 1111	0000 0000	POLY ON	*5
1111 1110			Active Sensing	

Notes :

nnnn : MIDI Channel number (0000 - 1111), ch-1 = 0000
The Basic Channel can be changed by panel operation.
Refer to 4. BASIC CHANNEL IN RECEIVING.

*1 Note numbers outside of the range 15 - 113 are transposed to the nearest octave inside this range.
The Key Transpose operation from the panel does not affect MIDI IN NOTE numbers

*2 If the power has been applied with the PIANO 1 switch being held down, this message is ignored.

*3 Refer to 8. PROGRAM CHANGE IN RECEIVING.

*4 When the ALL NOTES OFF is recognized, all MIDI-on notes are turned OFF. However, if the damper pedal is being pressed, these ON notes will not be turned OFF until the damper pedal is released. Similarly, if the MIDI Hold1 ON message has been received, the notes will not be turned off until the Hold1 OFF message is received.

*5 These Mode Messages (2nd byte = 123 - 127) are also recognized as the ALL NOTES OFF.

Mode Messages are recognized as follows:

	POLY ON (127)	MONO ON (126) mmmm = 1	MONO ON (126) mmmm <> 1
OMNI OFF (124)	OMNI = OFF POLY	OMNI = OFF POLY	OMNI = ON POLY
OMNI ON (125)	OMNI = ON POLY	OMNI = ON POLY	OMNI = ON POLY

3. BASIC CHANNEL IN TRANSMITTING

When the power is first applied, the Lower Basic Channel is normally set to 2, and Upper Basic Channel is normally set to 1.

However, the Basic Channel may be changed when the following key on the keyboard is pressed while the Lower (or Upper) PROGRAM CHANGE switch being held down. Lower and Upper can not be set at same channel.

Key	Basic Channel
A 0	1
A# 0	2
B 0	3
C 1	4
C# 1	5
D 1	6
D# 1	7
E 1	8
F 1	9
F# 1	10
G 1	11
G# 1	12
A 1	13
A# 1	14
B 1	15
C 2	16

When Lower(or Upper) Basic Channel is changed, following message are transmitted.

In the previous Basic Channel.

a. Hold1 OFF (If Damper pedal is trodden.)
b. Sostenuto OFF (If Sostenuto pedal is trodden.)
c. Soft OFF (If Soft pedal is trodden.)
When set to MIDI OUT OFF by panel operation, these messages are not sent.

In the new Basic Channel.

a. OMNI OFF
b. POLY ON
c. Volume
d. Hold1 ON (If Damper pedal is tredden)
e. Sostenuto ON (If Sostenuto pedal is treddden)
f. Soft ON (If Soft pedal is tredden)
When set to MIDI OUT OFF by panel operation, c,d,e and f messages are not sent.

4. BASIC CHANNEL IN RECEIVING

When the power is first applied, the Basic Channel is normally set to 1, and the receiver is set to the MODE 1 (OMNI ON, POLY).

However, the Basic Channel may be changed when the following key on the keyboard is pressed while the RECEIVE-CH switch being held down.
The receiver will be set to the MODE 3 (OMNI OFF, POLY).

Key	Basic Channel	OMNI
Power-up	1	ON
A 0	1	OFF
A# 0	2	OFF
B 0	3	OFF
C 1	4	OFF
C# 1	5	OFF
D 1	6	OFF
D# 1	7	OFF
E 1	8	OFF
F 1	9	OFF
F# 1	10	OFF
G 1	11	OFF
G# 1	12	OFF
A 1	13	OFF
A# 1	14	OFF
B 1	15	OFF
C 2	16	OFF

5. KEY TRANSPOSE

When the power is first applied, transpose value is 0.
The following chart shows the relationship between key positions and transposed values. (Set when a key is pressed while the KEY TRANSPOSE switch is being held down.)

Key	Transposed value (semitone)	Transmitted note range
power-up	0	21 - 108
F♯ 6	-6	15 - 102
G 6	-5	16 - 103
G♯ 6	-4	17 - 104
A 6	-3	18 - 105
A♯ 6	-2	19 - 106
B 6	-1	20 - 107
C 6	0	21 - 108
C♯ 6	+1	22 - 109
D 6	+2	23 - 110
D♯ 6	+3	24 - 111
E 6	+4	25 - 112
F 6	+5	26 - 113

6. TREMOLO, CHORUS IN TRANSMITTING

When the CHORUS (TREMOLO) switch is pressed while the Lower (or Upper) PROGRAM CHANGE switch is being held down, the CHORUS (TREMOLO) ON or OFF message is sent.
If the power has been applied with the MIDI OUT switch being held down, pressing CHORUS (TREMOLO) switch sends CHORUS (TREMOLO) ON or OFF message, whichever appropriate.

7. PROGRAM CHANGE IN TRANSMITTING

The following table shows the GROUP, BANK and NUMBER values related with key position which is set while the Lower(or Upper) PROGRAM CHANGE switch being held down.

Key	Related value
A 3	GROUP A
B 3	GROUP B
F♯ 2	BANK 1
G♯ 2	BANK 2
A♯ 2	BANK 3
C♯ 3	BANK 4
D♯ 3	BANK 5
F♯ 3	BANK 6
G♯ 3	BANK 7
A♯ 3	BANK 8
F 2	NUMBER 1
G 2	NUMBER 2
A 2	NUMBER 3
B 2	NUMBER 4
C 3	NUMBER 5
D 3	NUMBER 6
E 3	NUMBER 7
F 3	NUMBER 8

When one of the above-mentioned keys is pressed while the Lower (or Upper) PROGRAM CHANGE switch being held down, a Program Change message will be transmitted.
The transmitted program change numbers are related with the GROUP, BANK and NUMBER values as follows.

GROUP A

BANK \ NUMBER :	1	2	3	4	5	6	7	8
1	0	1	2	3	4	5	6	7
2	8	9	10	11	12	13	14	15
3	16	17	18	19	20	21	22	23
4	24	25	26	27	28	29	30	31
5	32	33	34	35	36	37	38	39
6	40	41	42	43	44	45	46	47
7	48	49	50	51	52	53	54	55
8	56	57	58	59	60	61	62	63

GROUP B

BANK \ NUMBER :	1	2	3	4	5	6	7	8
1	64	65	66	67	68	69	70	71
2	72	73	74	75	76	77	78	79
3	80	81	82	83	84	85	86	87
4	88	89	90	91	92	93	94	95
5	96	97	98	99	100	101	102	103
6	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119
8	120	121	122	123	124	125	126	127

If the power has been applied with the MIDI OUT switch being held down, the following Program Change message will be sent when respective number is selected by panel operation.

Switch	Prog #
PIANO 1	0
PIANO 2	1
PIANO 3	2
HARPSICHORD	3
CLAVI	4
VIBRAPHONE	5
E.PIANO 1	6
E.PIANO 2	7

8. PROGRAM CHANGE IN RECEIVING

If the power has been applied with the PIANO 1 switch being held down, this message is ignored.

The assignment of received Program Change messages are as follows.
The program numbers 32 - 127 are ignored.

Prog #	Voice	CHORUS	TREMOLO
0	PIANO 1	OFF	OFF
1	PIANO 2	OFF	OFF
2	PIANO 3	OFF	OFF
3	HARPSICHORD	OFF	OFF
4	CLAVI	OFF	OFF
5	VIBRAPHONE	OFF	OFF
6	E.PIANO 1	OFF	OFF
7	E.PIANO 2	OFF	OFF
8	PIANO 1	ON	OFF
9	PIANO 2	ON	OFF
10	PIANO 3	ON	OFF
11	HARPSICHORD	ON	OFF
12	CLAVI	ON	OFF
13	VIBRAPHONE	ON	OFF
14	E.PIANO 1	ON	OFF
15	E.PIANO 2	ON	OFF
16	PIANO 1	OFF	ON
17	PIANO 2	OFF	ON
18	PIANO 3	OFF	ON
19	HARPSICHORD	OFF	ON
20	CLAVI	OFF	ON
21	VIBRAPHONE	OFF	ON
22	E.PIANO 1	OFF	ON
23	E.PIANO 2	OFF	ON
24	PIANO 1	ON	ON
25	PIANO 2	ON	ON
26	PIANO 3	ON	ON
27	HARPSICHORD	ON	ON
28	CLAVI	ON	ON
29	VIBRAPHONE	ON	ON
30	E.PIANO 1	ON	ON
31	E.PIANO 2	ON	ON

The assignment of received Program Change messages can be set at another mode that is set if the power is applied while the MIDI OUT switch being held down. In this mode assignment does not effect the TREMOLO and CHORUS.
The assignment of received Program Change messages are as follows.
The program numbers 8 - 127 are ignored.

Prog #	Voice
0	PIANO 1
1	PIANO 2
2	PIANO 3
3	HARPSICHORD
4	CLAVI
5	VIBRAPHONE
6	E.PIANO 1
7	E.PIANO 2

Even if the Program Change message is recognized, the VOICE will not be changed to the new VOICE until all on-notes are turned OFF and Midi is turned OFF.

Digital piano

MODEL RD-250s/300s MIDI Implementation Chart

Date : Aug. 20. 1987
Version : 1.0

Function.....	Transmitted	Recognized	Remarks
Basic Default	1,2	1	
Channel Changed	1–16	1–16	
Mode Default	3	1	
Messages	POLY,OMNI OFF	POLY, OMNI ON/OFF	
Altered	**********	MONO(M≠1)→1, (M=1)→3	
Note Number	15-113(RD-300s),22-108(RD-250s)	0–127	
True voice	**********	15–113	
Velocity Note ON	○	○	v=1-127
Note OFF	× (9n v=0)	×	
After Key's	×	×	
Touch Ch's	×	×	
Pitch Bender	×	×	
Control Change 7	○	×	Volume
64	○	○	Hold 1
66	○	○	Sostenuto
67	○	○	Soft pedal
92	○	○	Tremolo
93	○	○	Chorus
Prog Change True #	○ (0–127)	○(0–31)	can be ignored by
	**********	0–31	power-up setting
System Exclusive	×	×	
System Common Song Pos	×	×	
Song Sel	×	×	
Tune	×	×	
System Real Time Clock	×	×	
Commands	×	×	
Aux Local ON OFF	×	×	
All Notes OFF	○	○ (123–127)	
Mes- Active Sense	○	○	
sages Reset	×	×	
Notes	When power up, ch–1 OMNI OFF and POLY are sent. When Basic channel is changed. Mode is set to 3.		

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF MONO

○ : Yes
× : No

■ Specifications

RD-250s/RD-300s
76 key (RD-250s), 88 key (RD-300s), 16 Voice Polyphonic, SA System Digital Piano
(10 Voice Polyphonic for Harpsichord, Clavi and Electric Piano 2)

Preset Voices
- Pinao, 1, 2, and 3
- Harpsichord
- Clavi
- Vibraphone
- Electric Piano 1, 2

Effects
- Chorus (On/Off)
- Tremolo (On/Off, Rate, Depth)

Panel Switches
- Key Transpose
- Split
- MIDI OUT
- MID Lower
- MIDI Upper
- Receive Channel/Internal Voice
- Voice Selectors × 8
- Chorus
- Tremolo

Controls
- External Lower Volume
- External Upper Volume
- Volume
- Brilliance
- Tremolo Rate
- Tremolo Depth

Indicators
- Key Transpose
- Split
- MIDI OUT
- MIDI Lower
- MIDI Upper
- Receive Channel/Internal Voice × 8
- Chours
- Tremolo

REAR PANEL
- Receptacle
- Power Switch
- Headphones Jack (stereo)
- Output Jacks (L and R)
- Output Level Switch (L/M/H)
- Tuning Knob
- Soft/Remote Pedal Jack
- Damper Pedal Jack
- MIDI Connectors (IN, OUT, THRU)

Dimensions
RD-250s: 1242(W) × 461(D) × 133(H) mm
48-7/8" × 18-1/8" × 5-1/4"
RD-300s: 1405(W) × 461(D) × 133(H) mm
55-5/16" × 18-1/8" × 5-1/4"

Weight
RD-250s: 29kg/64lb
RD-300s: 33kg/72lb 14oz

Power Consumption:
20W (117V), 25W (220V, 240V)

Accessories: Power Cord × 1
Connection Cord (LP-25) × 2
Pedal Switch (DP-2) × 1
Owner's Manual
Guide Book "MIDI„

OPTIONS
Stand: KS-7
Stereo Headphones: RH-100, RH-10
MIDI Cable: MSC-07, 15, 25, 50, 100

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